ESDIS

EOS

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June 27, 1994

- **Agenda**
  - **EOSDIS System Context**
  - **Organizations**
    - « **Development, Integration, Operations, and Independent Verification & Validation (IVV)**
  - **Example Integration Dependencies**

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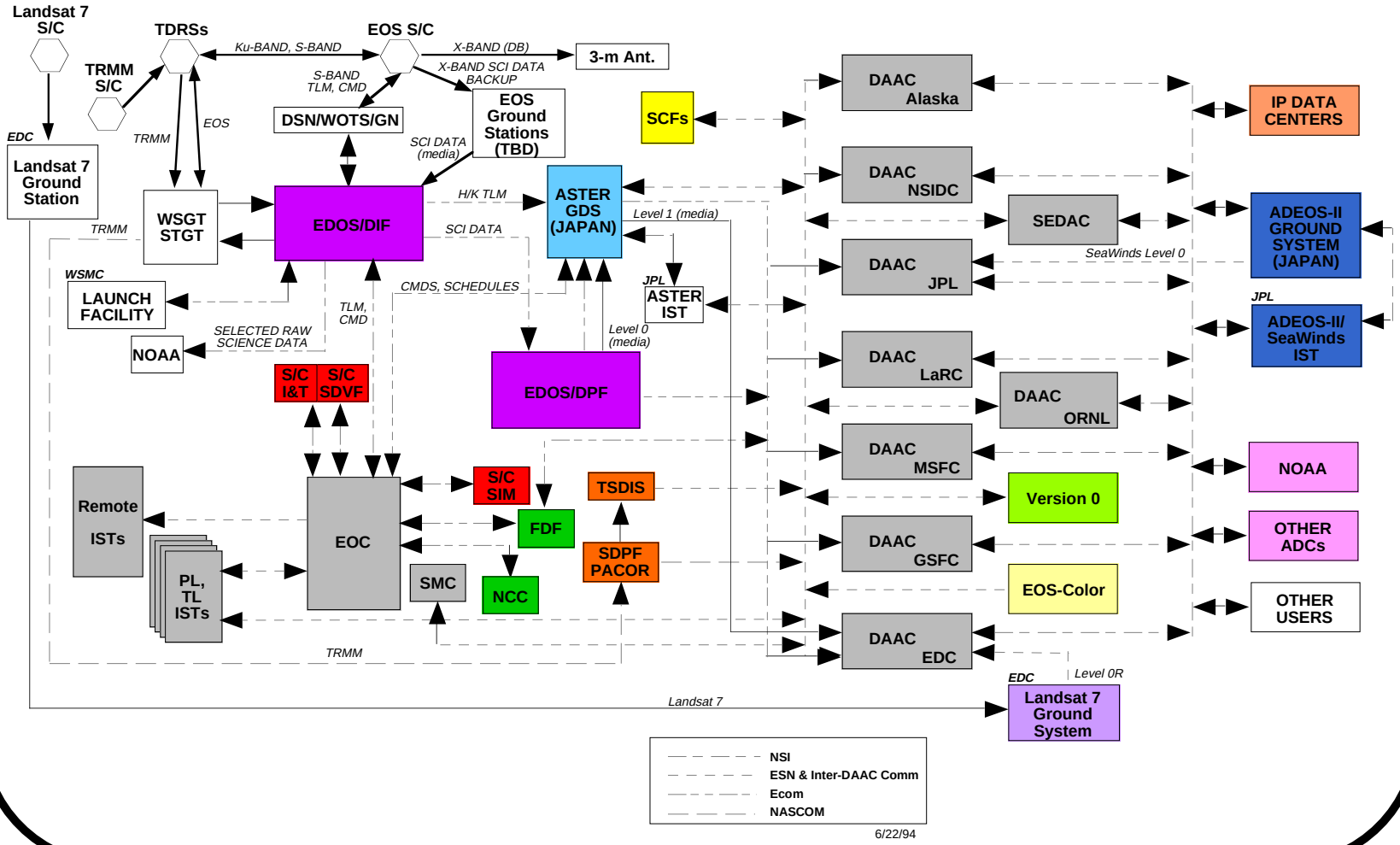
Context Diagram

EOS



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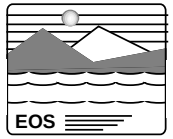
EOSDIS - System Context



- **Many disparate system components:**
  - **New development:**
    - « **ECS and EDOS (External), Ecom (Internal)**
  - **International Partners**
    - « **MTI/NASDA, ESA, CSA**
  - **GSFC Institutional Systems**
    - « **Flight Dynamics Facility**
  - **EOS Flight Projects**
    - « **Spacecraft Systems, Mfg. Plant, Launch Facilities**
  - **Space Communication Systems**
    - « **TDRS/White Sands, Direct Broadcast, Backup**
  - **Non-EOS Flight Projects**
    - « **TRMM, Landsat-7, Color**
  - **Other Agencies**
    - « **NOAA**

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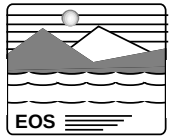

- **Deliver a robust system that meets planned functionality and performance**
- **Ensure that the time-phased capabilities are scheduled to support mission and user needs**
- **Ready for mission simulations and system certification**

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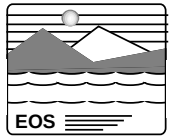
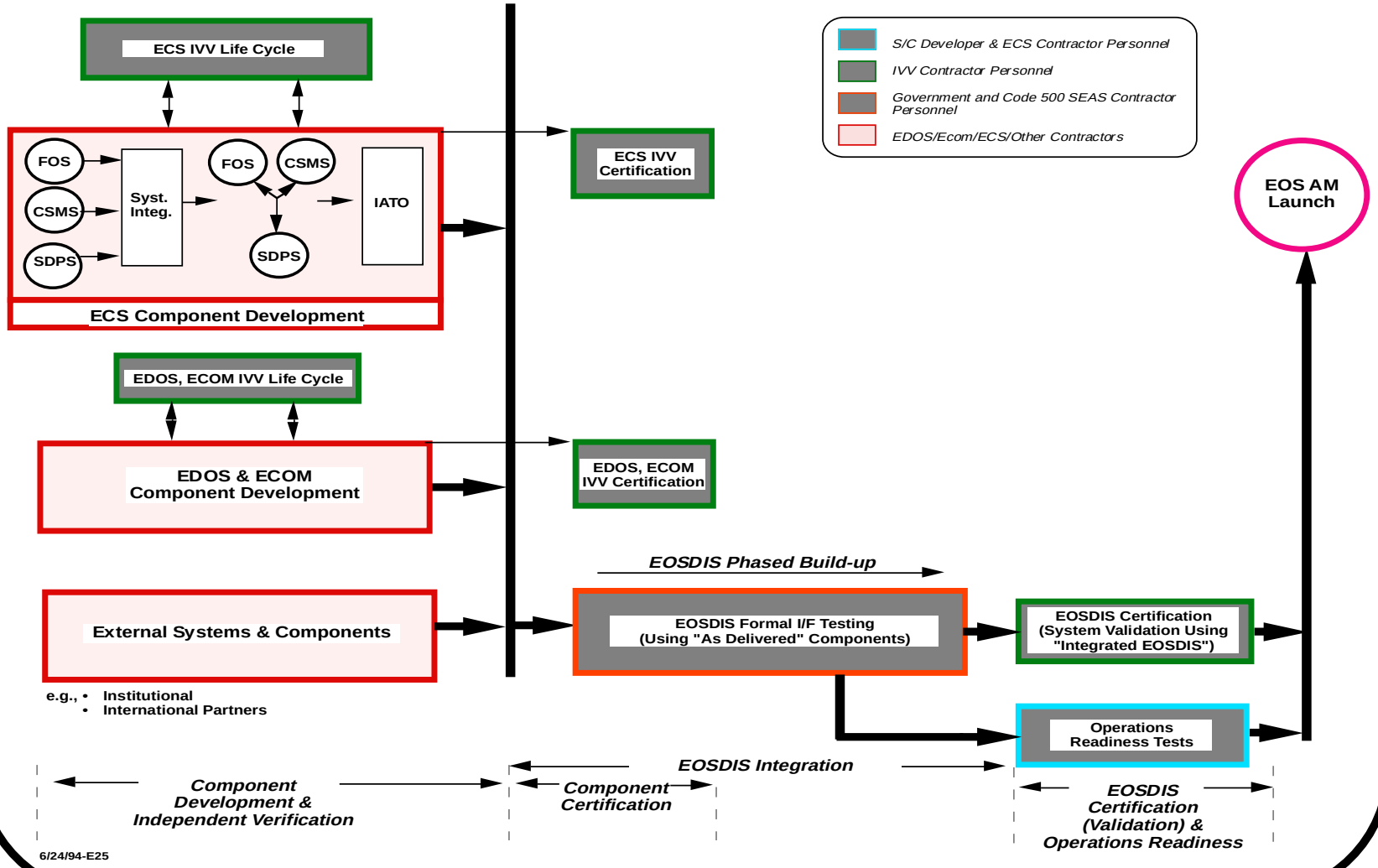
EOSDIS Development Integration & Test





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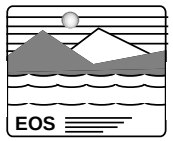
Organizations



- Component Integration and Test
  - Levels 3 & 4 requirements
  - External interfaces ready for system integration
- EOSDIS Integration and Test
  - Levels 2 & 3 requirements
  - Key interface testing with “as built” components
  - Plan, coordinate, conduct, analyze, and report intercomponent and end-to-end tests
  - Prepare system for transfer to operations
- Operations
  - Flight, Science, and System
  - Perform prelaunch data flow and end-to-end tests
  - Perform mission simulations
  - Conduct operations training

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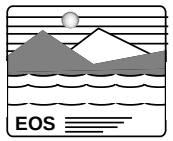
Organizations (Continued)



- **Independent Verification & Validation:**
  - **Independent**
    - « **Independent from the development organizations**
  - **Verification (Life Cycle IVV)**
    - « ***The interactive process of determining whether the products of a given phase of a system development cycle fulfill the requirements established during the previous phase"***
    - « **Supports early detection/correction of errors, and early identification of potential problems and risks**
    - « **Ensure that requirements track across all levels**
    - « **Analyze and assesses processes, products, and results associated with all development phases (requirements, design, implementation, and test)**

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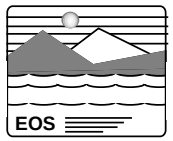
Organizations (Continued)



- **Independent Verification & Validation (Continued):**
  - **Validation (Component and System Certification)**
    - « ***"The process of evaluating the "as built" system at the end of its development process to ensure compliance with system requirements and user needs"***
    - « **Independent assessment of the functionality and performance of individual component releases**
      - — **Performed through analysis, observation, and supplemental testing where needed**
    - « **Define system certification criteria that are testable and assess the ability of EOSDIS to met these criteria**
      - — **Focus on user scenarios**
      - — **DAACs review plans and support tests**

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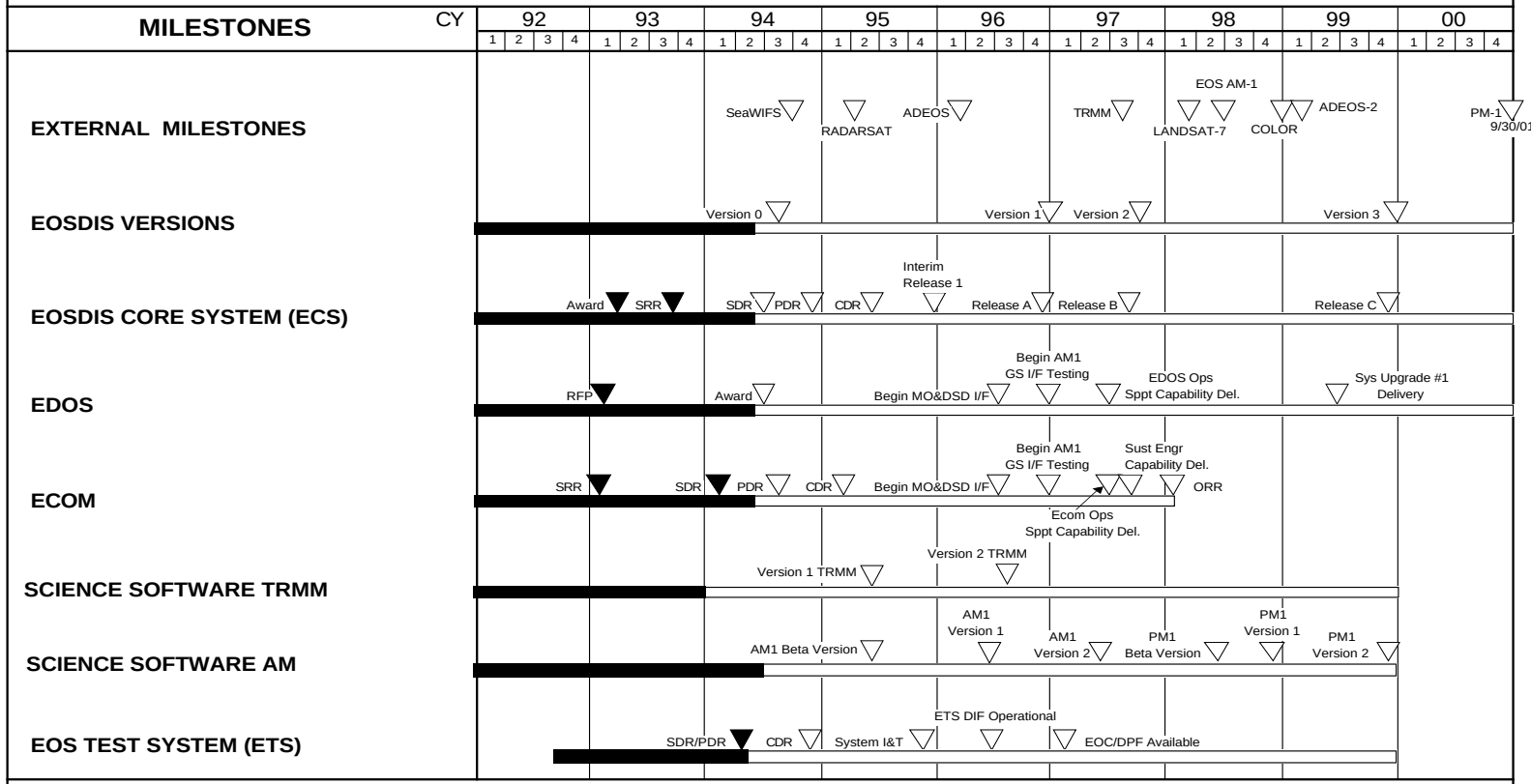
Example Integration Dependencies

EOS

EARTH OBSERVING SYSTEM DATA INFORMATION SYSTEM (EOSDIS)

STATUS AS OF: 6/16/94



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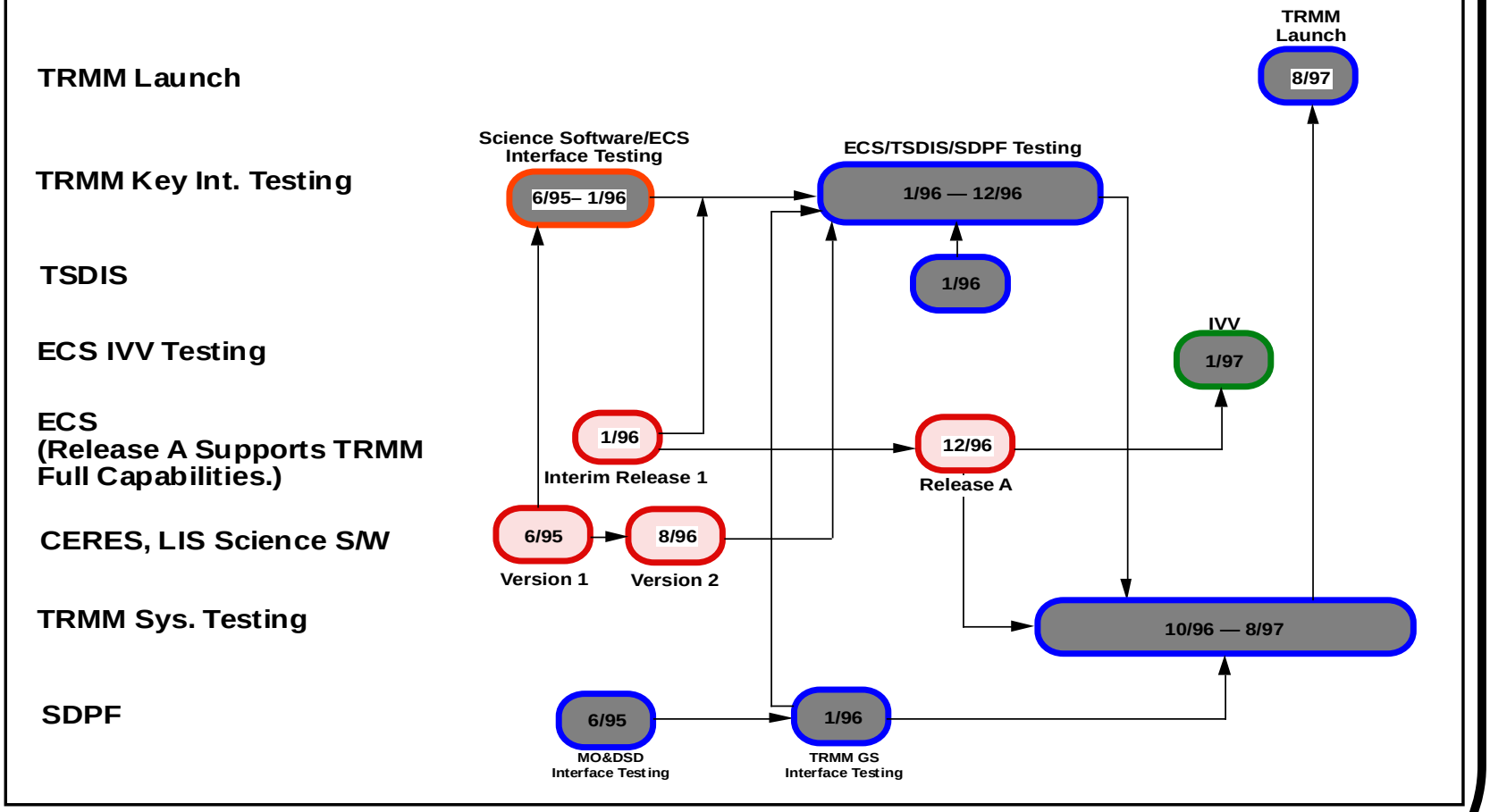
TRMM/EOS GS Integration Dependencies

EOS



= Not under ESDIS Project control.

EDOS/Ecom/ECS/Other Contractor

IVV Contractor Personnel

Government and Code 500 SEAS Contractor Personnel

6/27/94-E29

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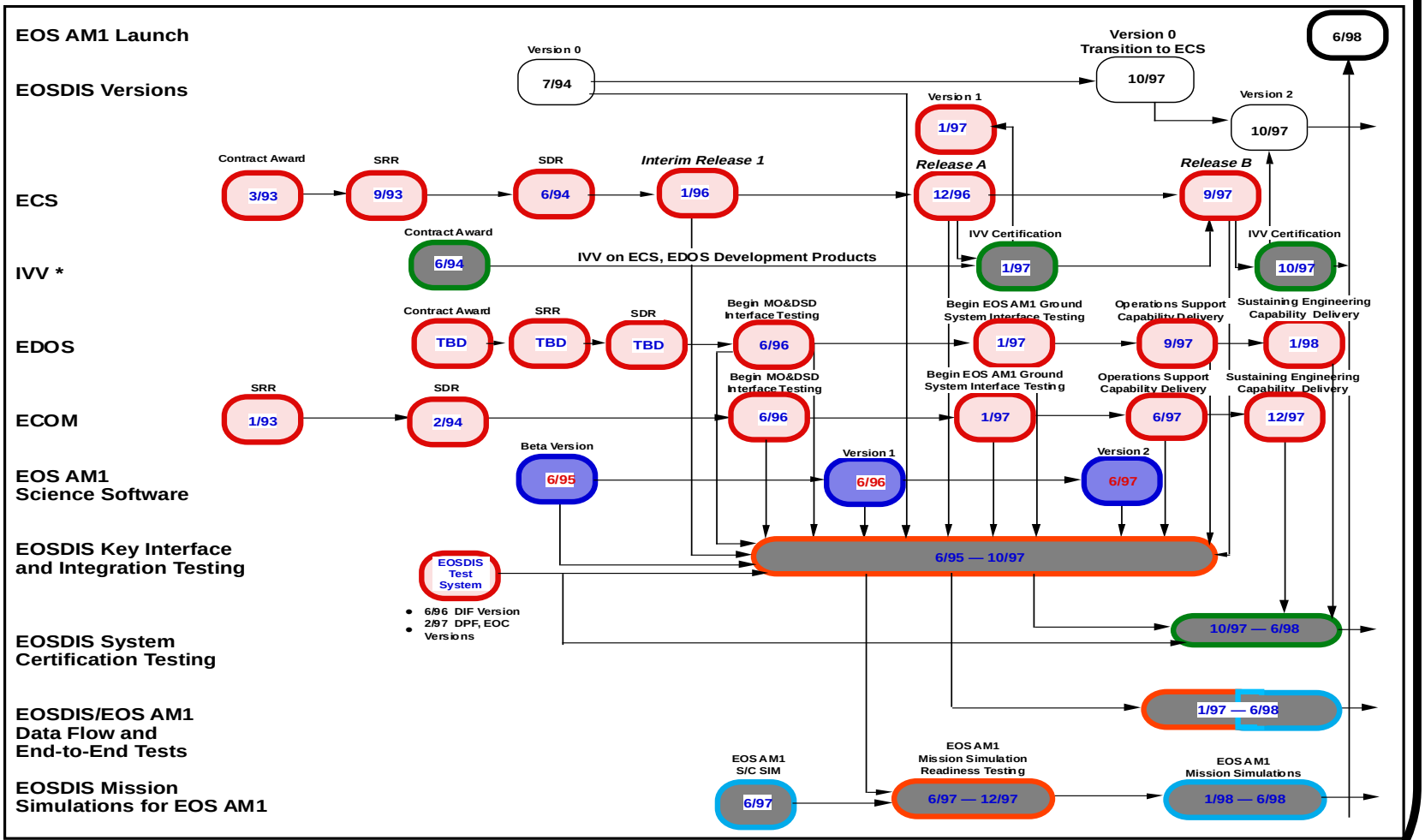
EOSDIS AM-1 Integration Dependencies



*IVV on ECOM, EDOS releases not shown.

6/27/94-E2

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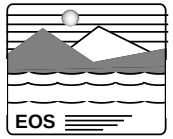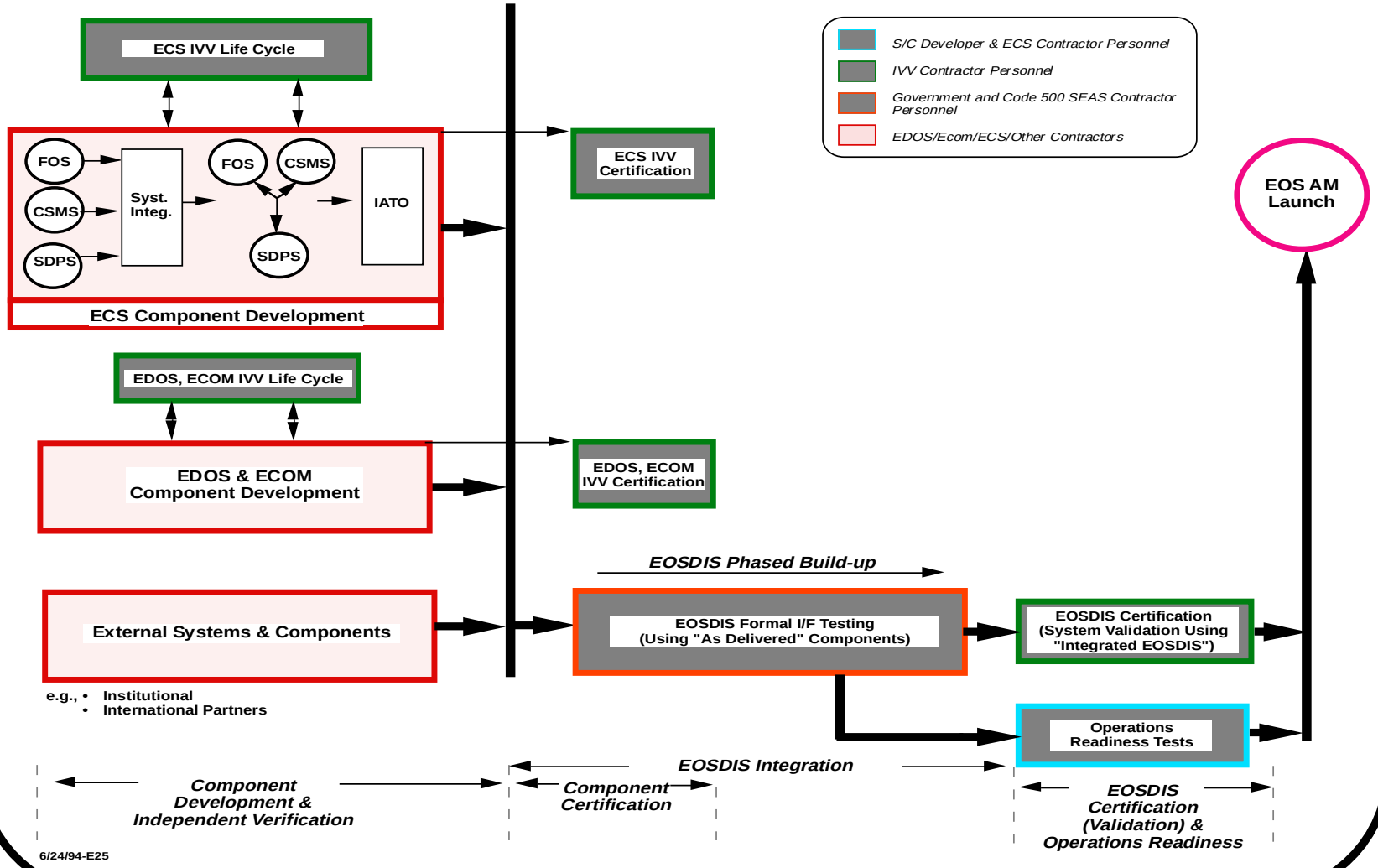
EOSDIS Development Integration & Test